

28	Ta 5	CAP LAYER
26	PdPtMn 15	ANTIFERROMAGNETIC LAYER
24	CoFeB 2.5	PINNED LAYER
22	Cu 2.8	INTERMEDIATE LAYER
20	CoFeB 2	FREE LAYER
18	NiFe 2	
16	Ta 5	UNDER LAYER

FIG. 3

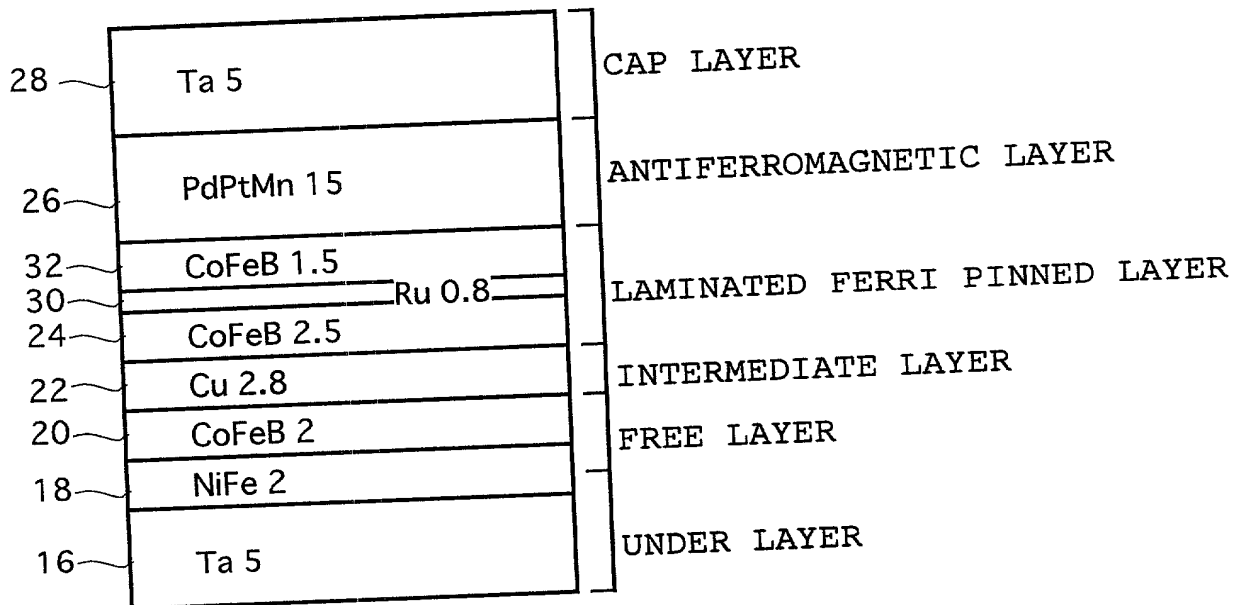


FIG. 4

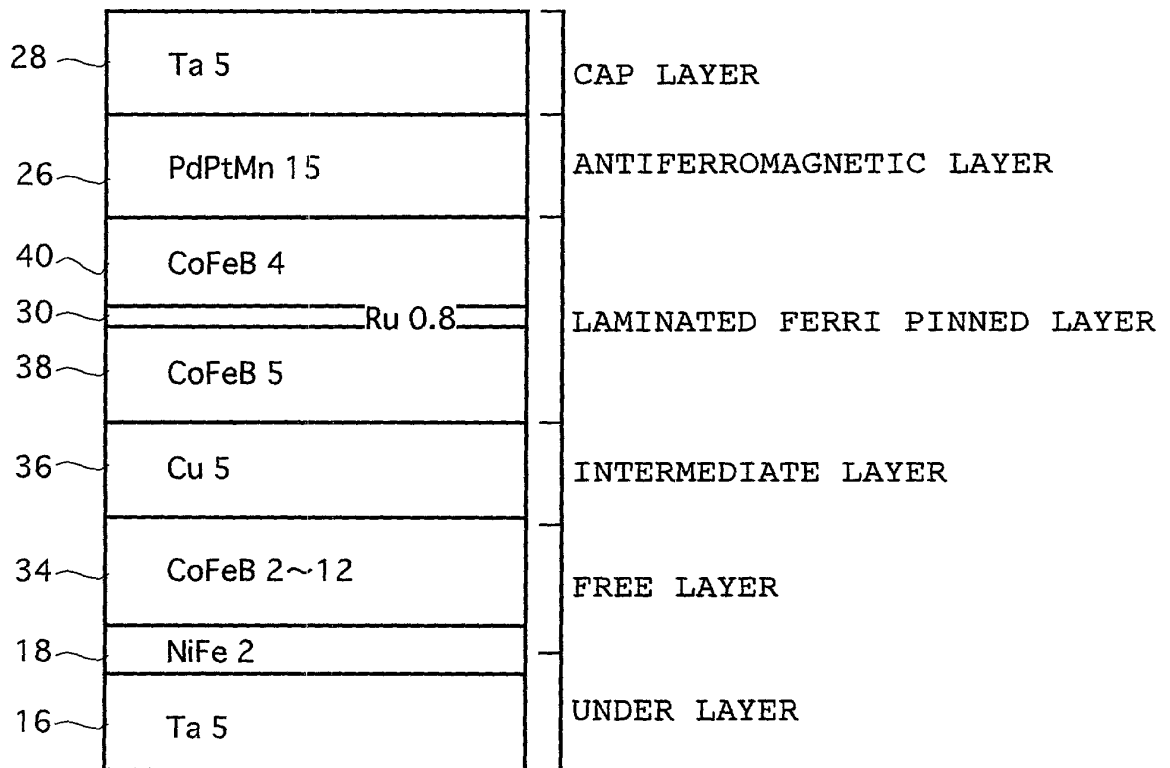


FIG. 4

FIG. 5

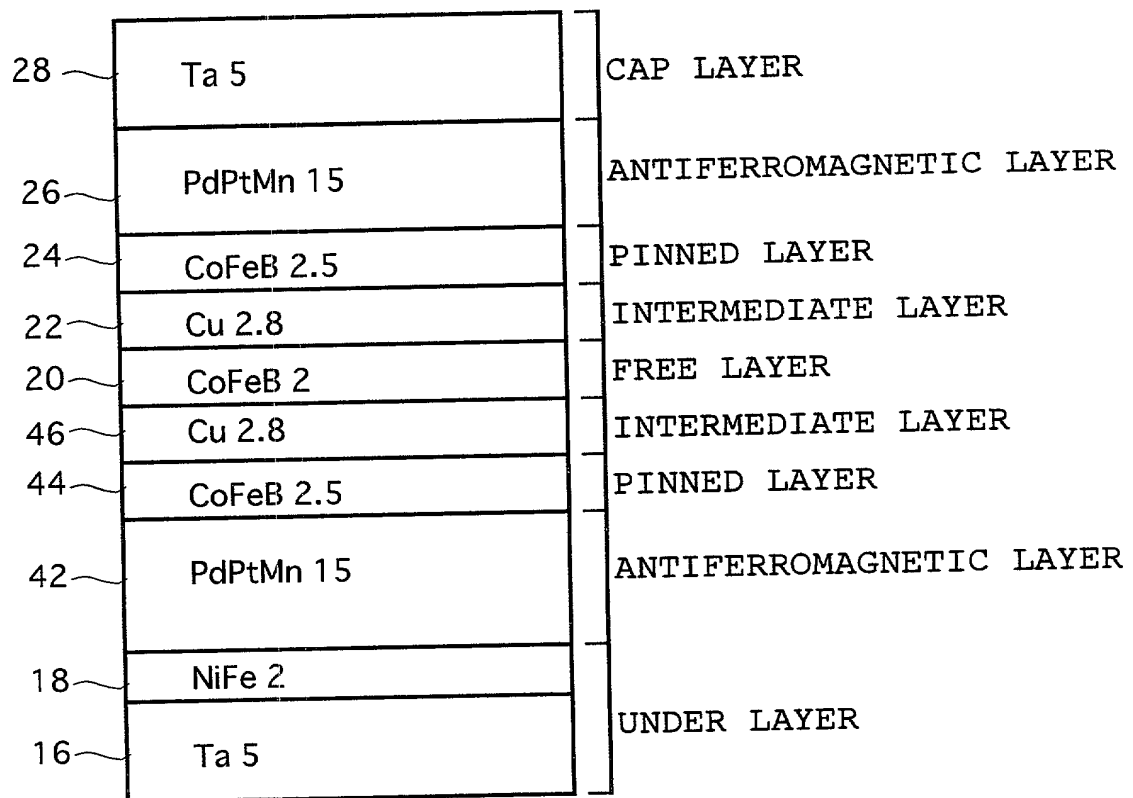


FIG. 6

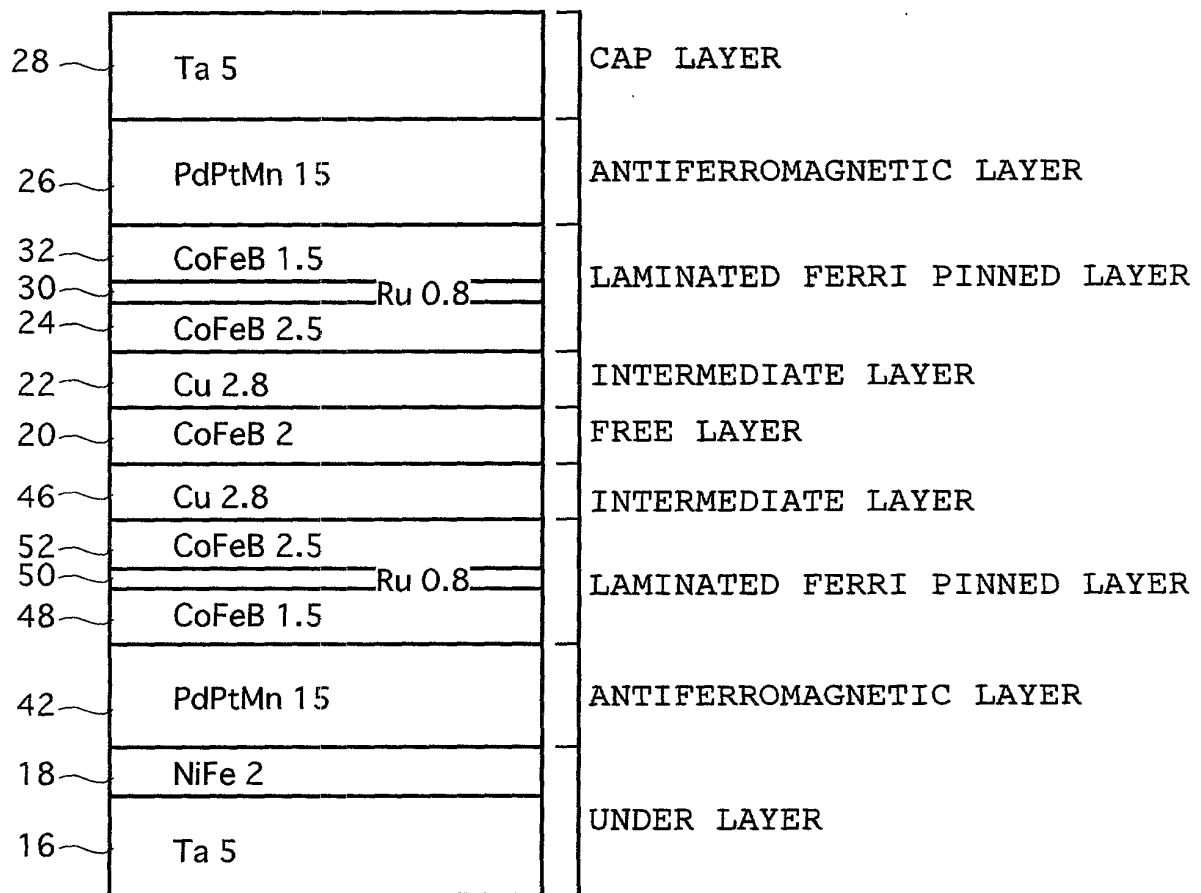


FIG. 7

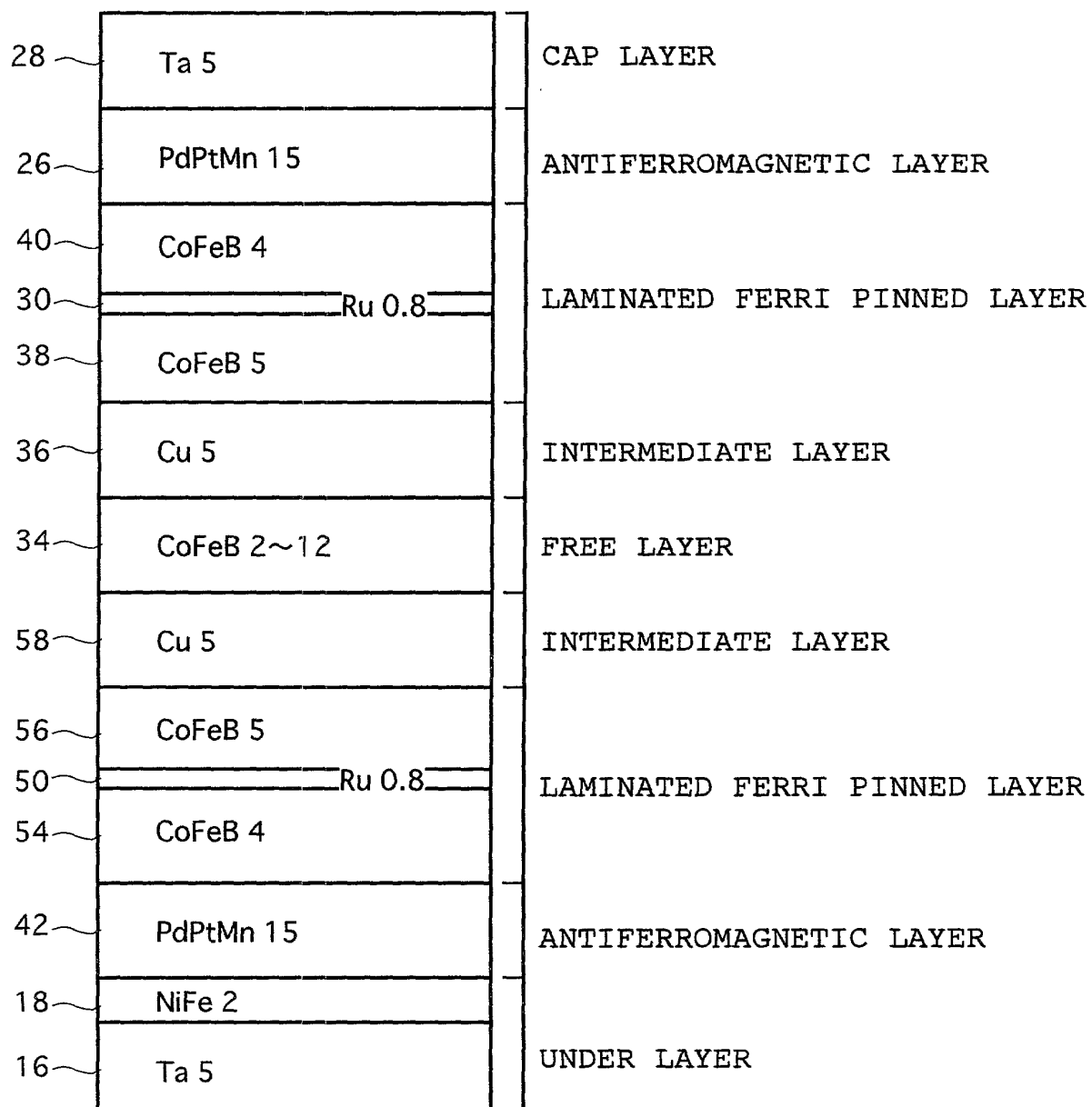
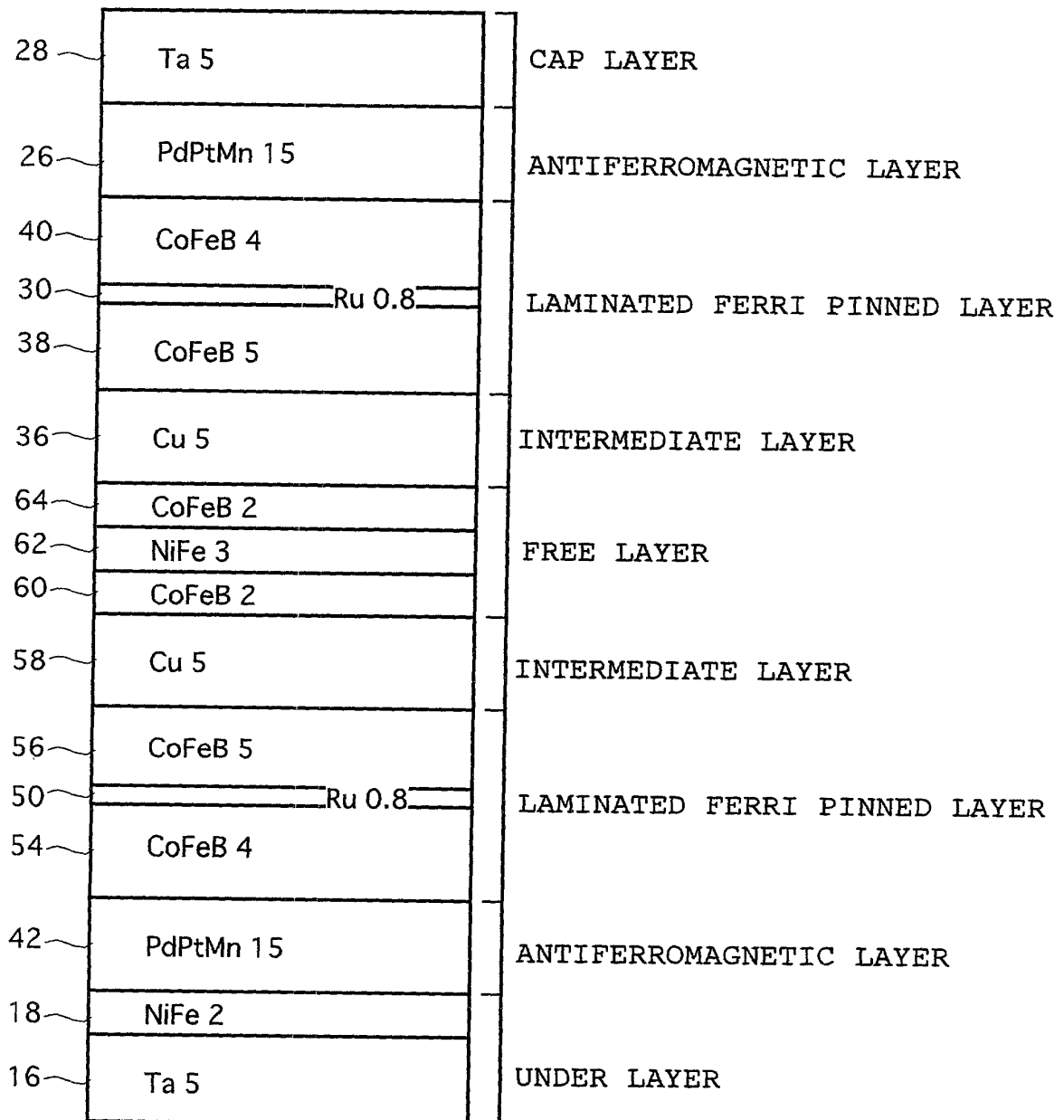


FIG. 8



T03260 4002560

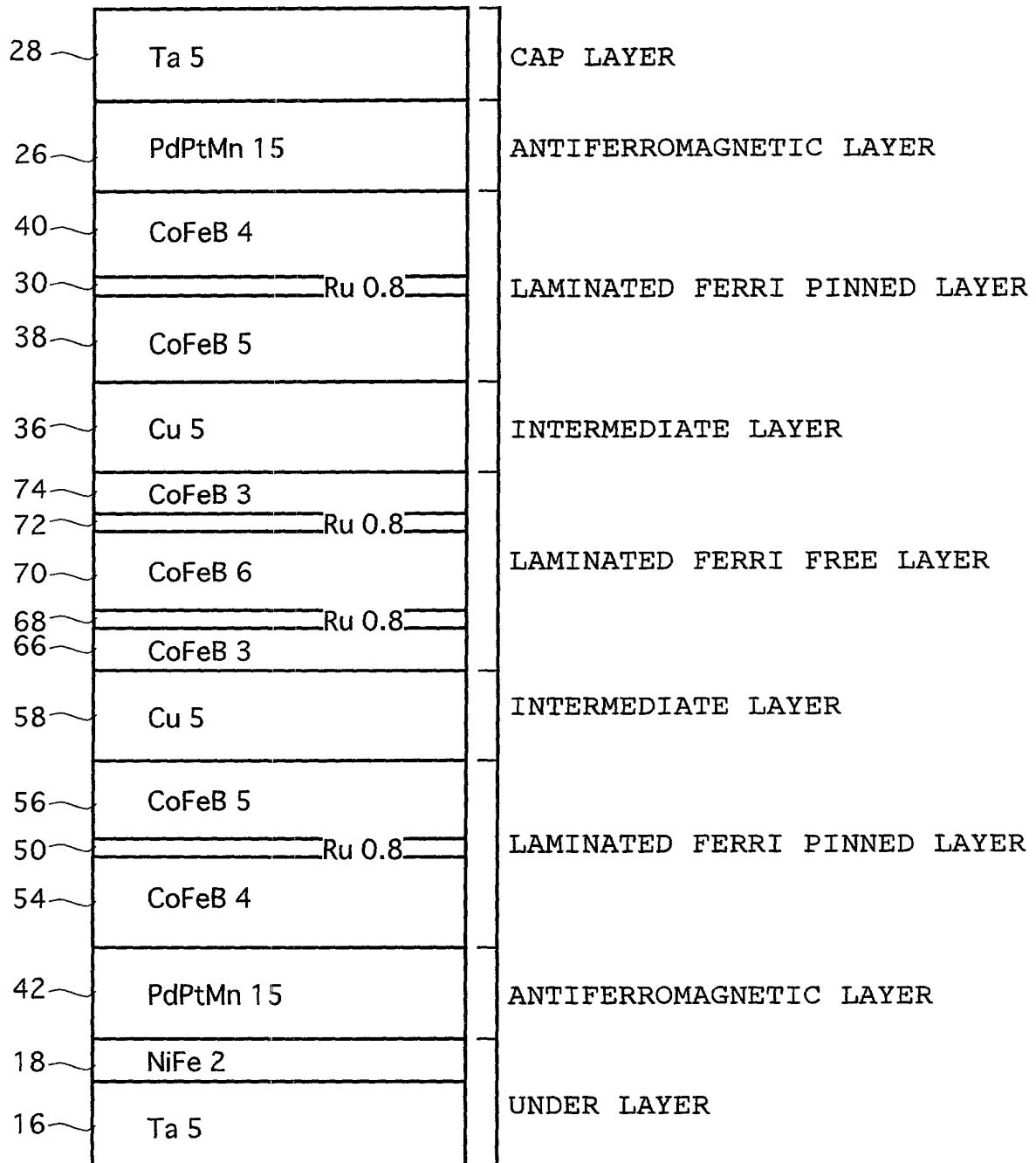


FIG. 10A

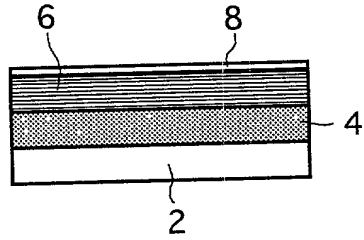


FIG. 10A'

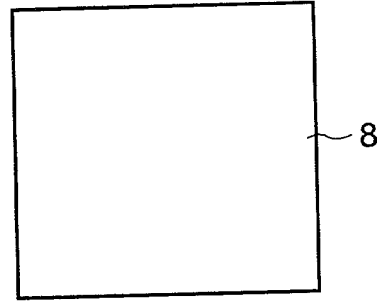


FIG. 10B

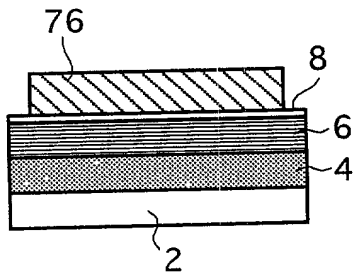


FIG. 10B'

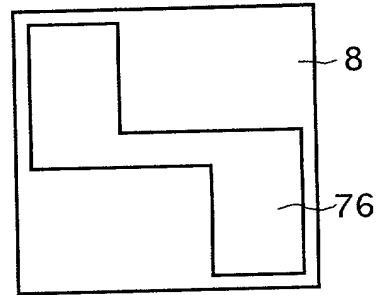


FIG. 10C

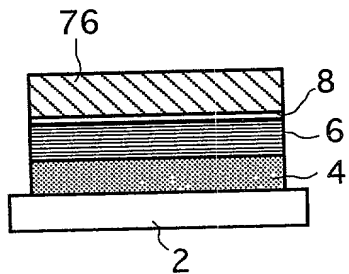


FIG. 10C'

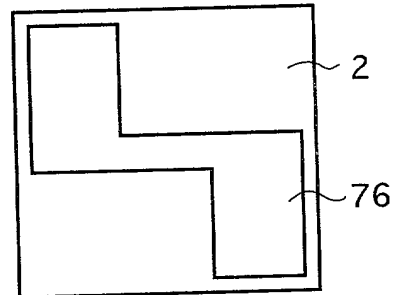


FIG. 10A

FIG. 10D

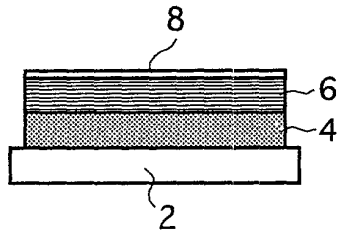


FIG. 10D'

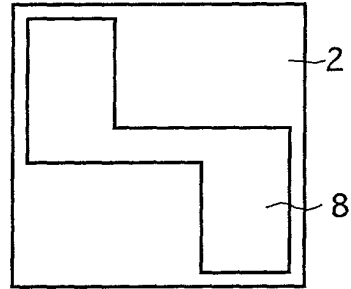


FIG. 10E

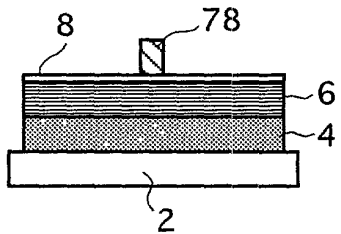


FIG. 10E'

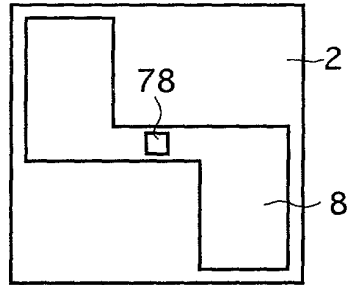


FIG. 10F

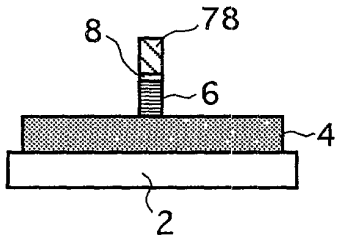


FIG. 10F'

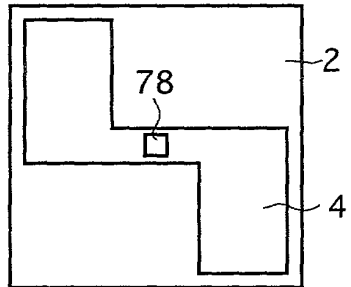


FIG. 10D' 360 0080

FIG. 10G

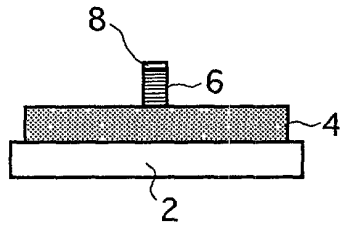


FIG. 10G'

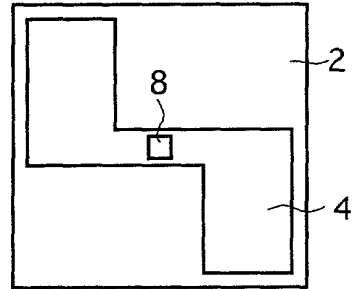


FIG. 10H

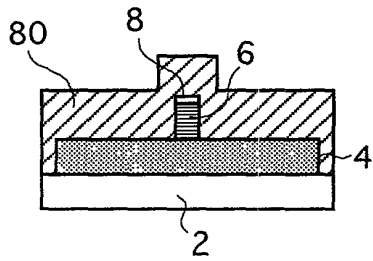


FIG. 10H'

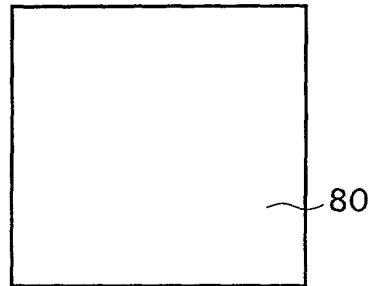


FIG. 10I

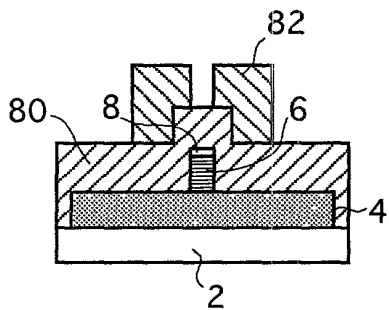


FIG. 10I'

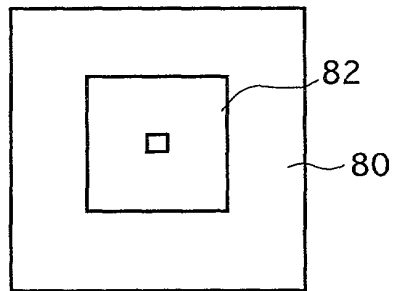


FIG. 10G

FIG. 10J

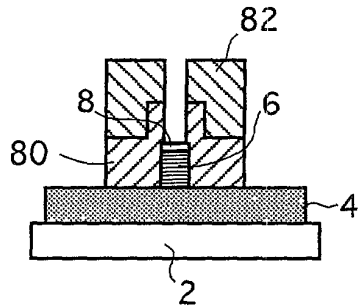


FIG. 10J'

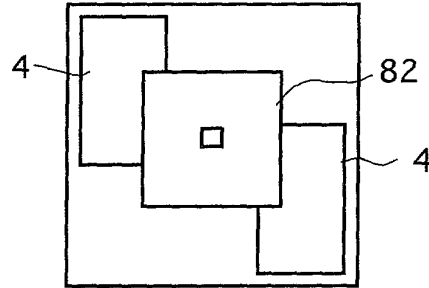


FIG. 10K

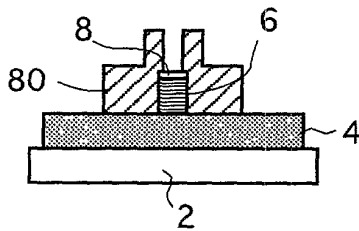


FIG. 10K'

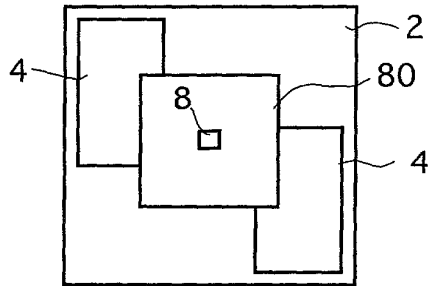


FIG. 10L

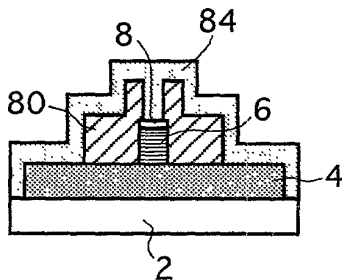


FIG. 10L'

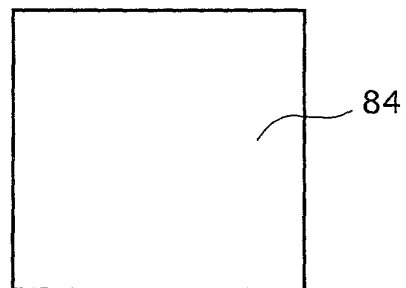


FIG. 10J

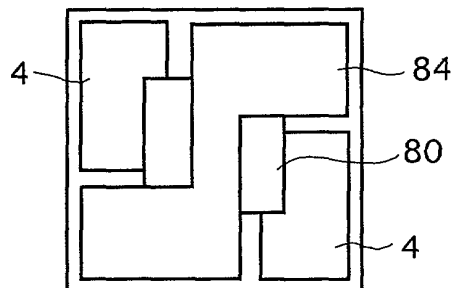


FIG. 11

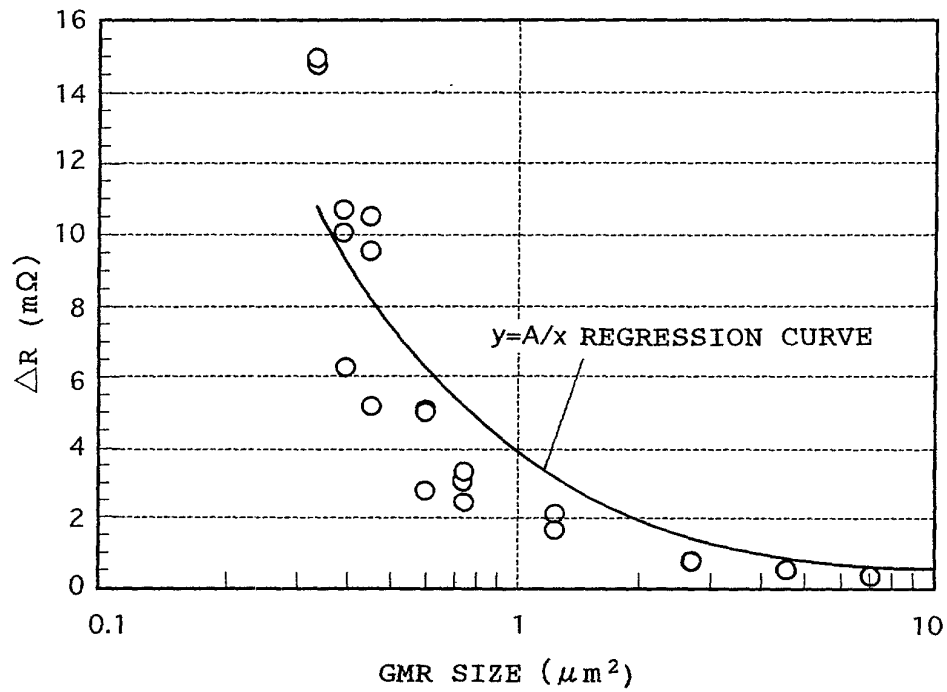
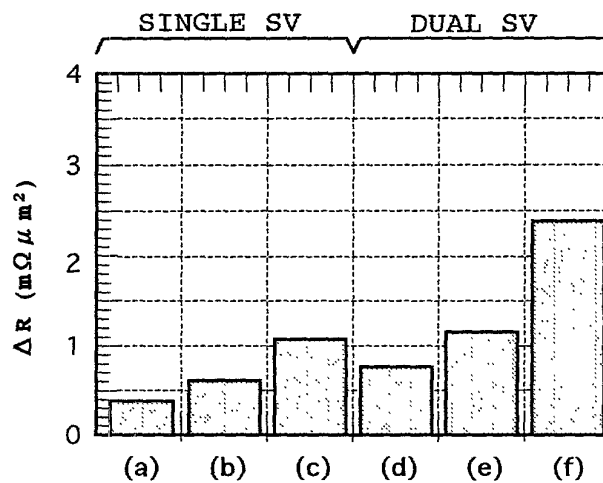


TABLE 4000000

FIG. 12



- (a): CIP OPTIMUM LAYER THICKNESS
- (b): LAMINATED FERRI
- (c): INCREASED THICKNESSES OF PINNED LAYER AND INTERMEDIATE LAYER
- (d): CIP OPTIMUM LAYER THICKNESS
- (e): LAMINATED FERRI
- (f): INCREASED THICKNESSES OF PINNED LAYER AND INTERMEDIATE LAYER

FIG. 13

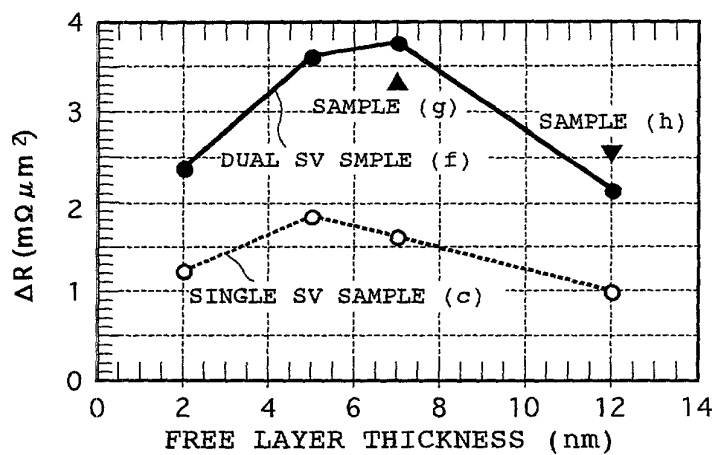


FIG. 14A

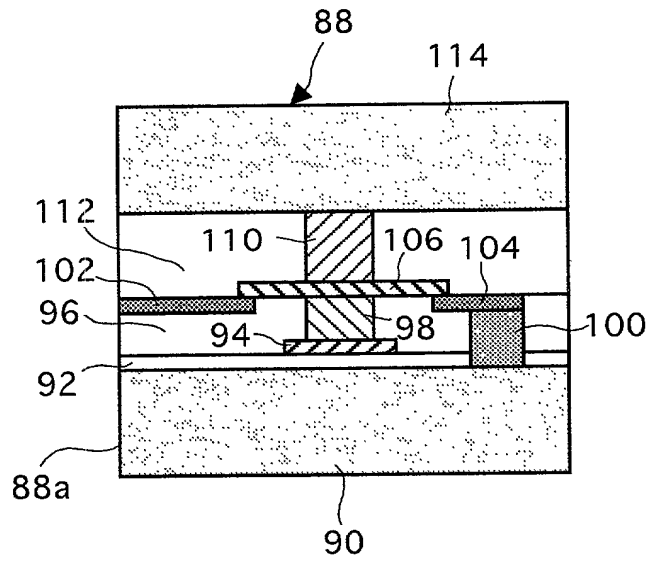


FIG. 14B

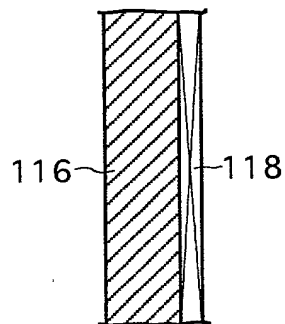


FIG. 15A

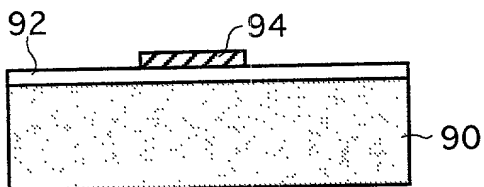


FIG. 15A'

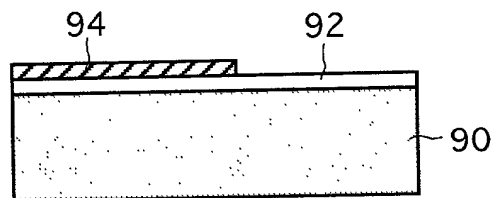


FIG. 15B

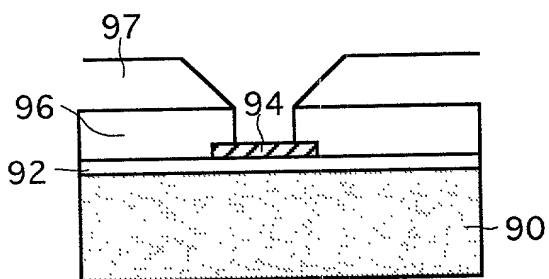


FIG. 15B'

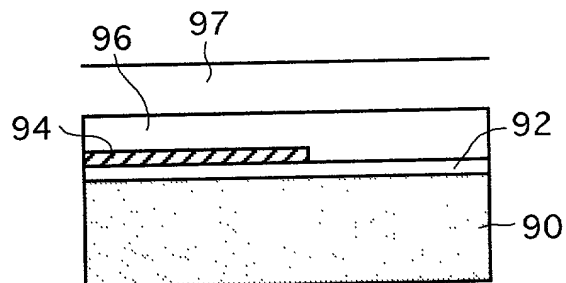


FIG. 15C

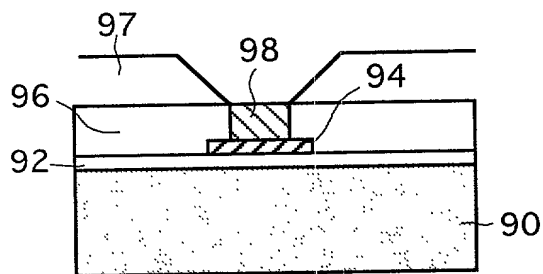


FIG. 15C'

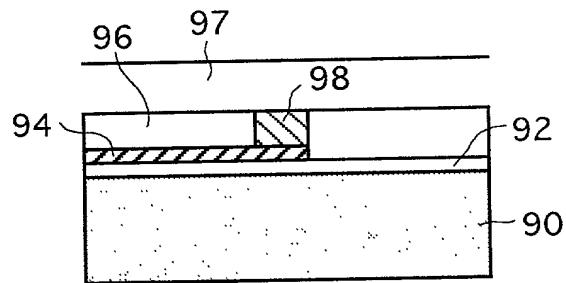


FIG. 15D

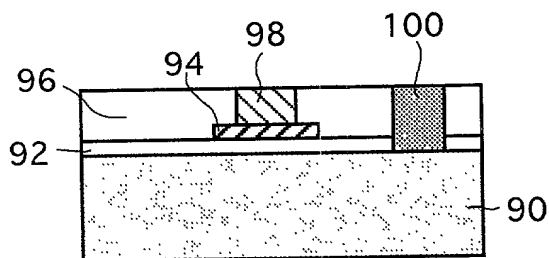


FIG. 15D'

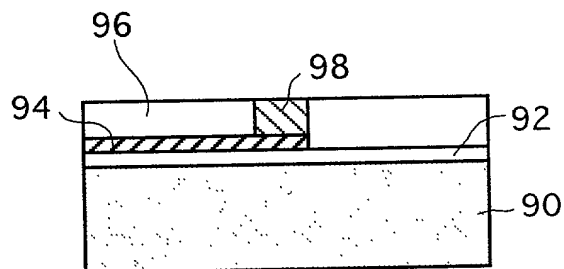


FIG. 15A

FIG. 15E

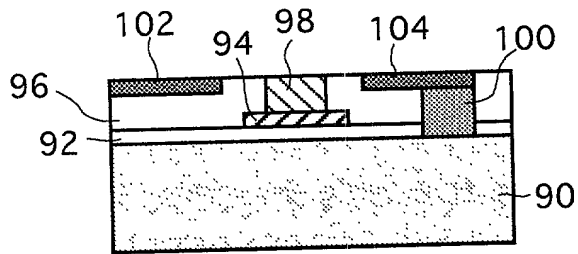


FIG. 15E'

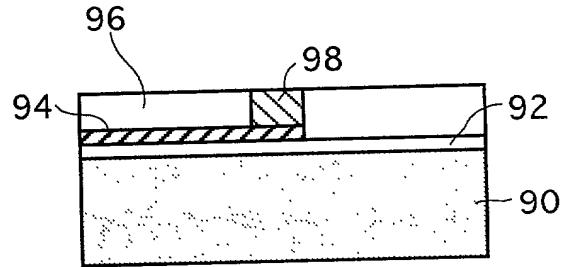


FIG. 15F

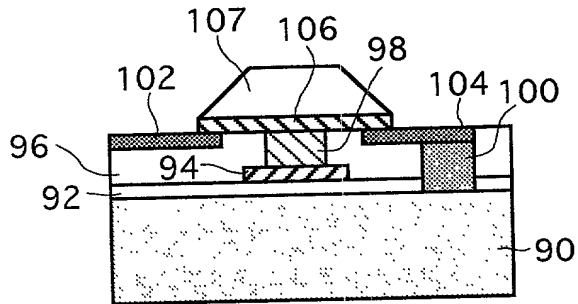


FIG. 15F'

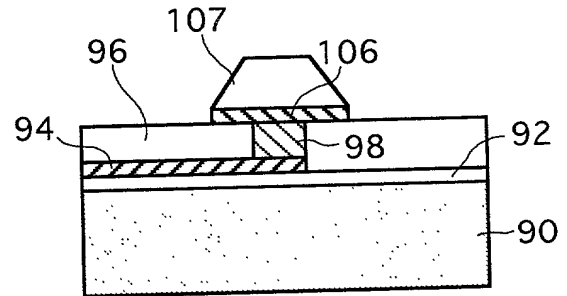


FIG. 15G

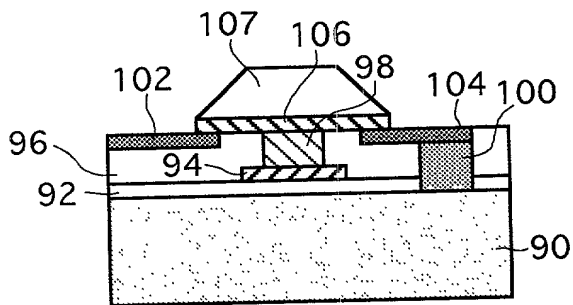
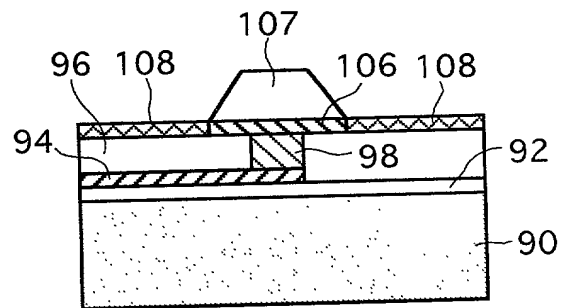


FIG. 15G'



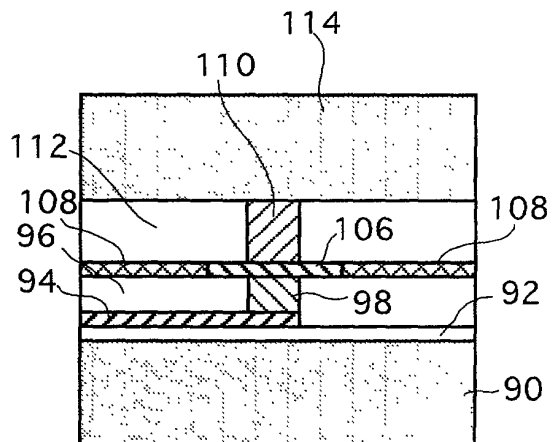


FIG. 16A

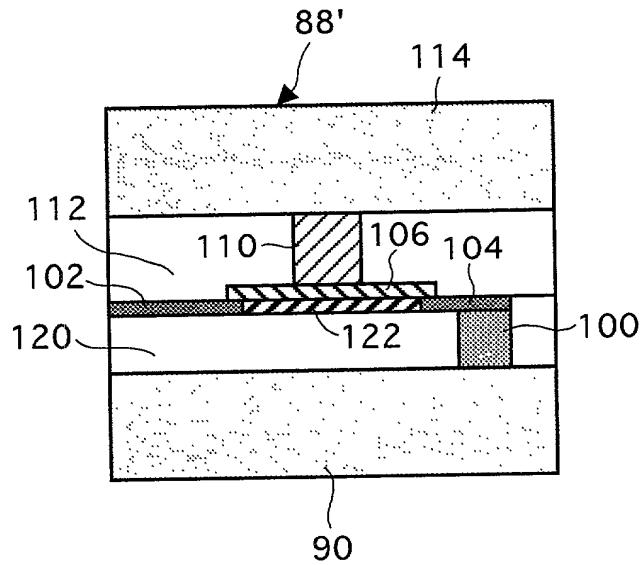


FIG. 16B

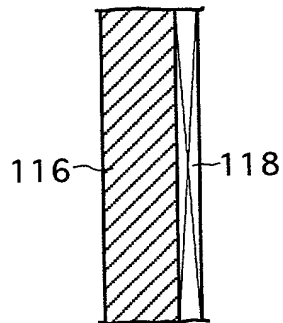


FIG. 17A

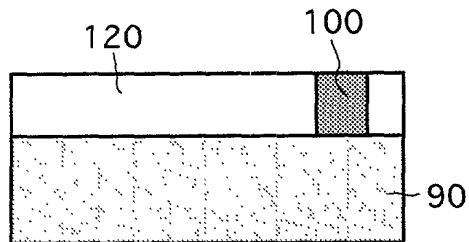


FIG. 17A'

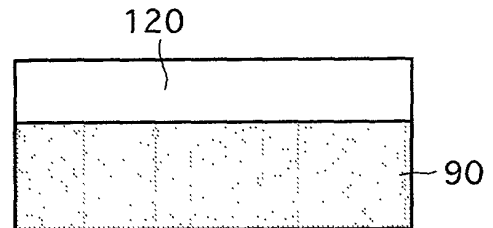


FIG. 17B

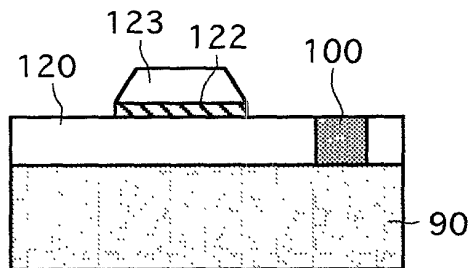


FIG. 17B'

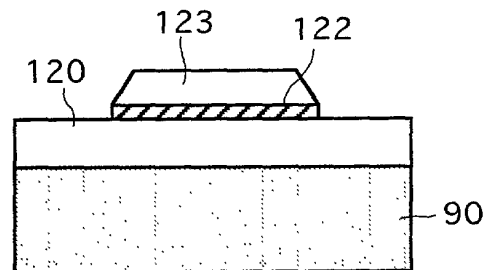


FIG. 17C

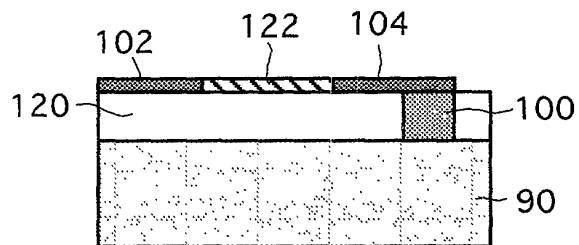
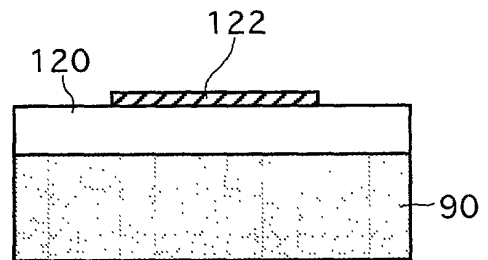


FIG. 17C'



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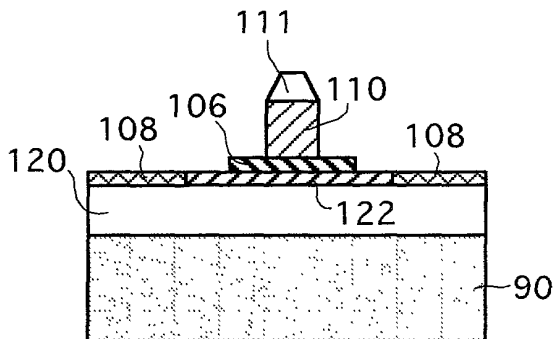


FIG. 17G

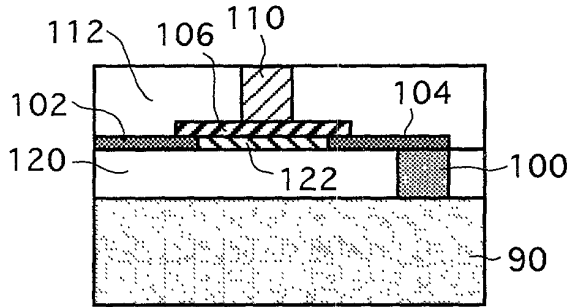


FIG. 17G'

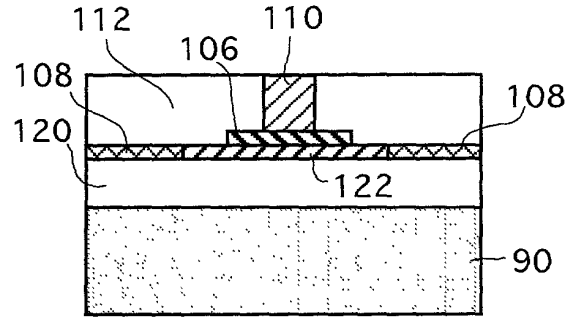


FIG. 17H

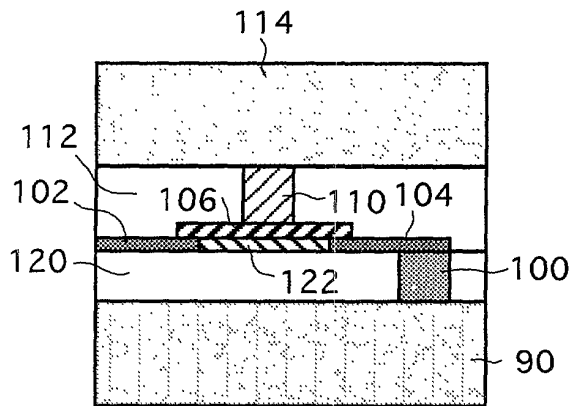


FIG. 17H'

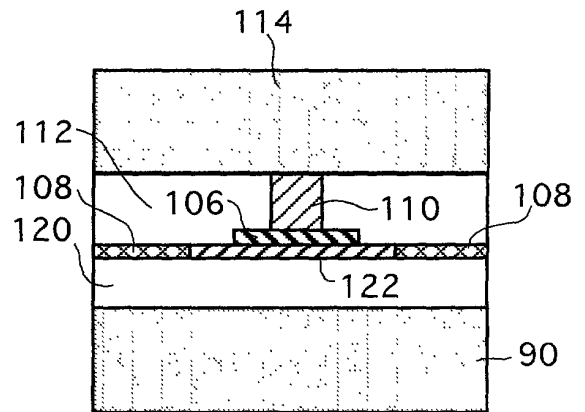


FIG. 18

Ta 5	144
IrMn 10	142
NiFe 2	140
CoFeB 1.5	
Cu 3.5	138
CoFeB 2.2	136
PdPtMn 25	134
NiFe 5	132
Ta 5	130

FIG. 19

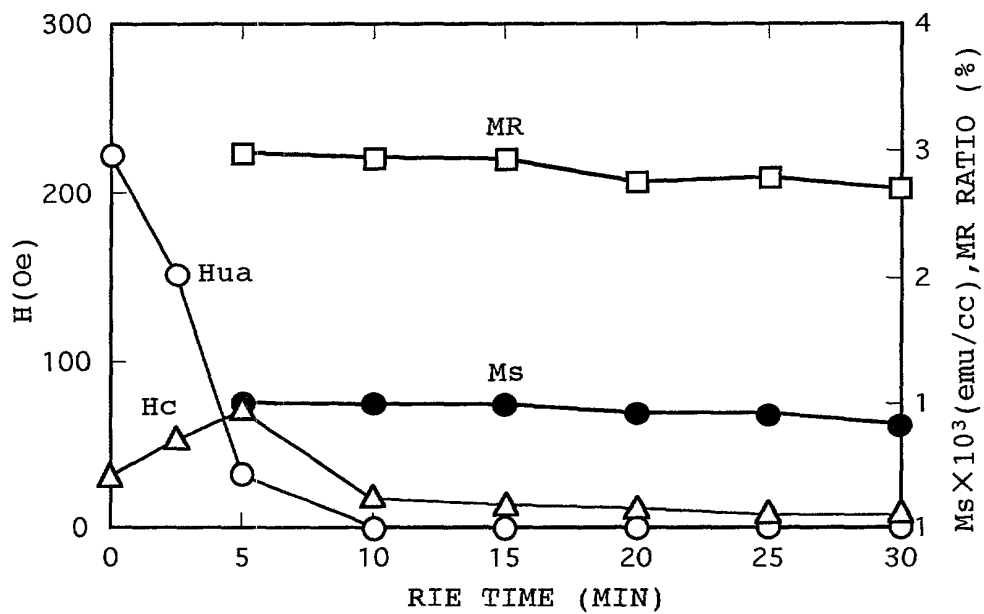


FIG. 20

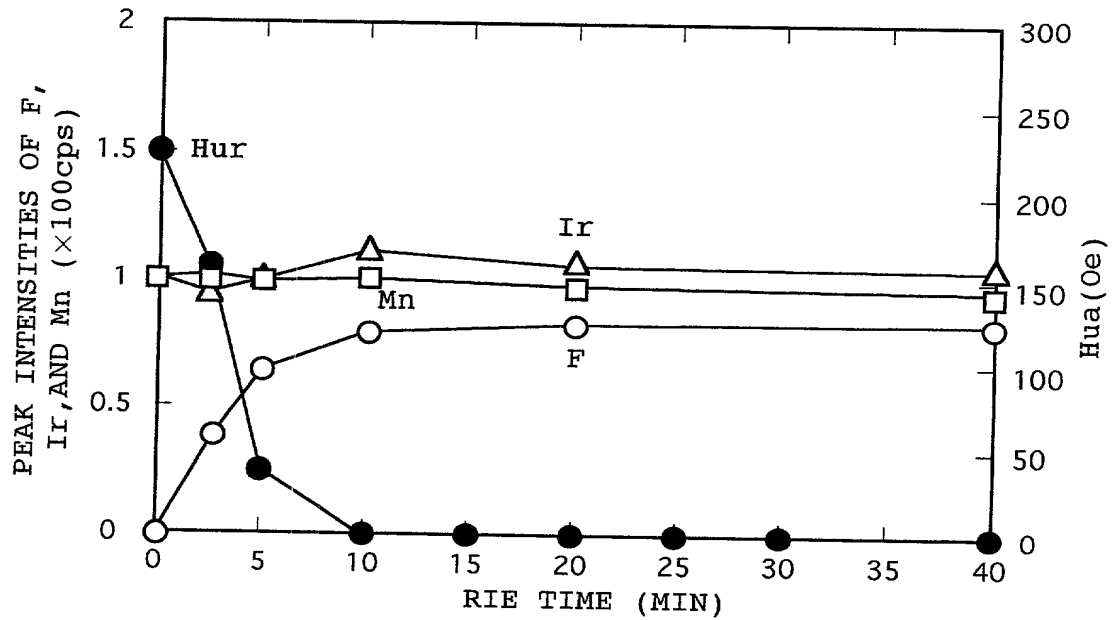


FIG. 21

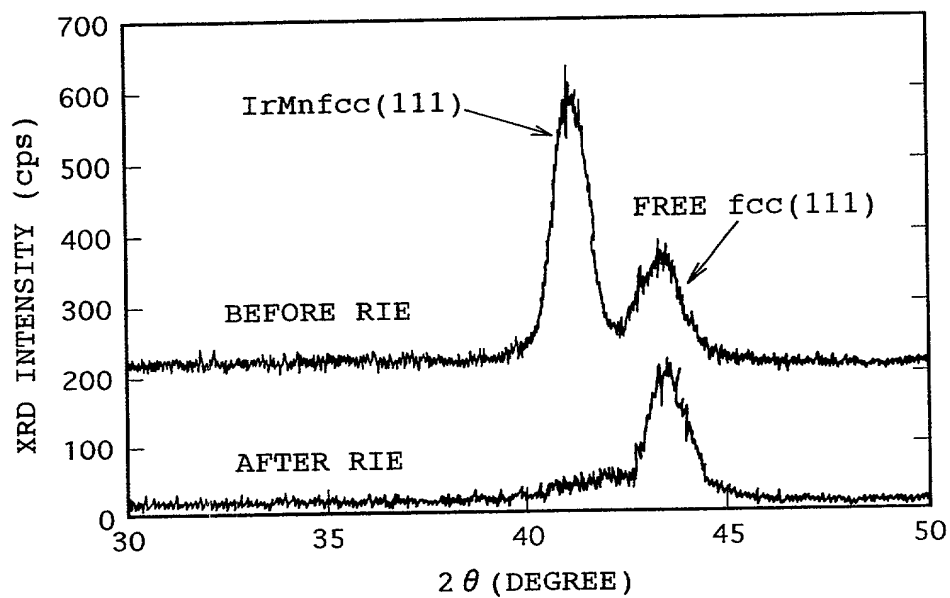


FIG. 22A

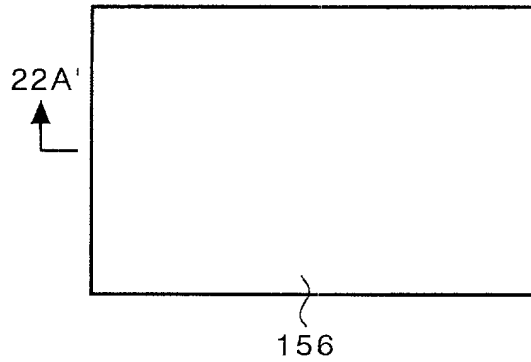


FIG. 22A'

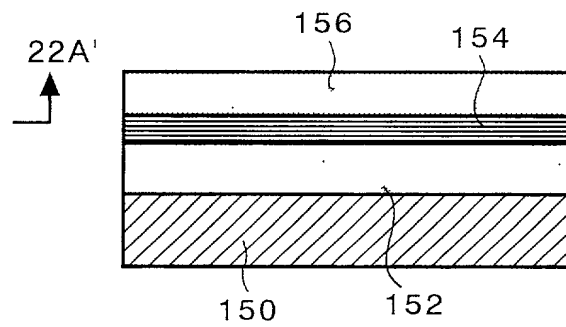


FIG. 22B

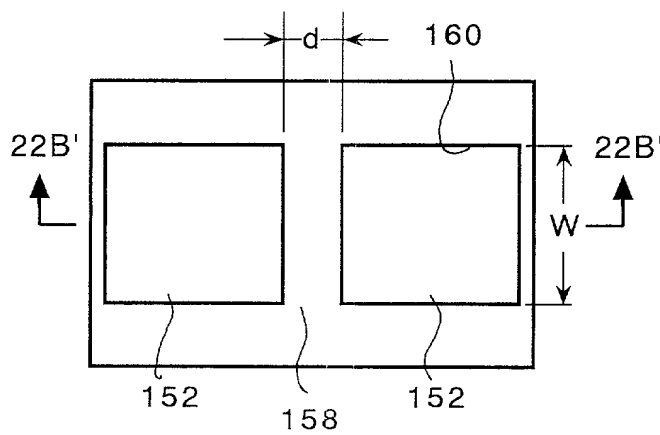


FIG. 22B'

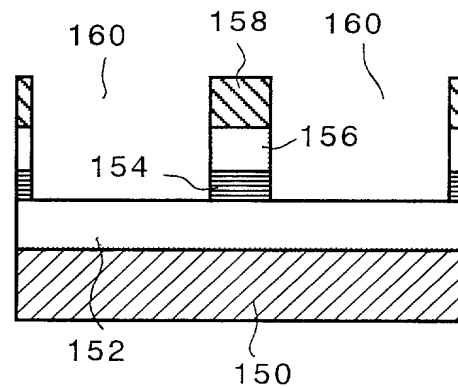


FIG. 22C

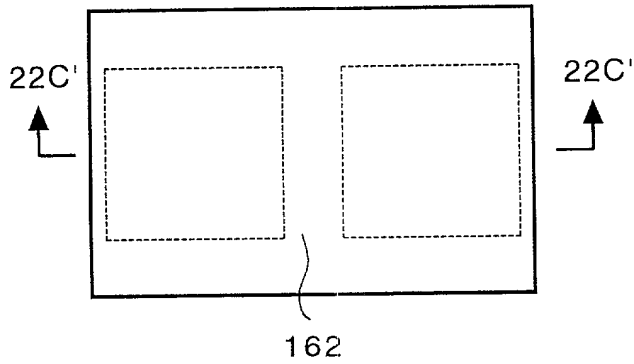


FIG. 22C'

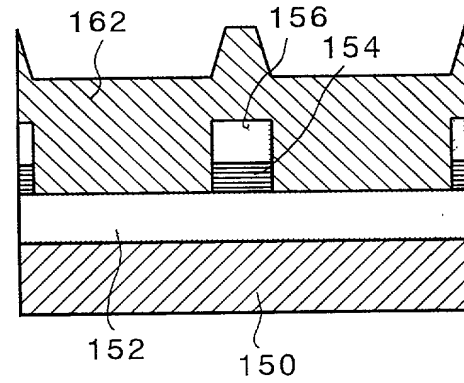


FIG. 22D

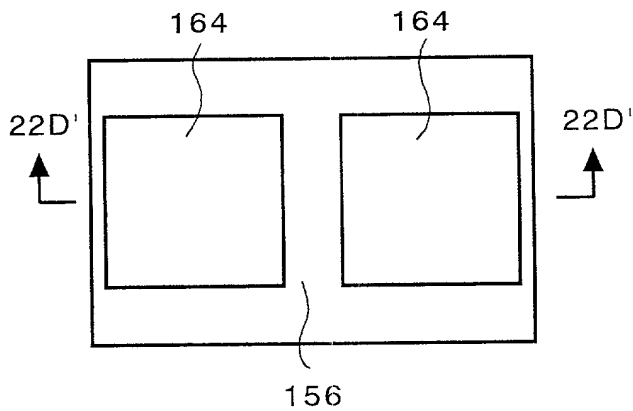


FIG. 22D'

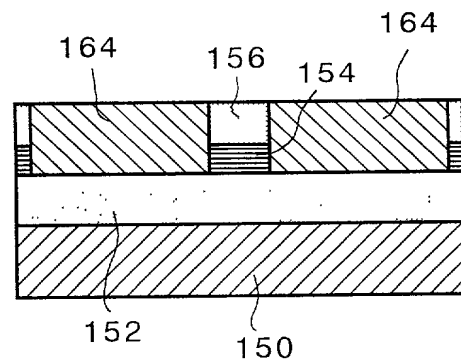


FIG. 22E

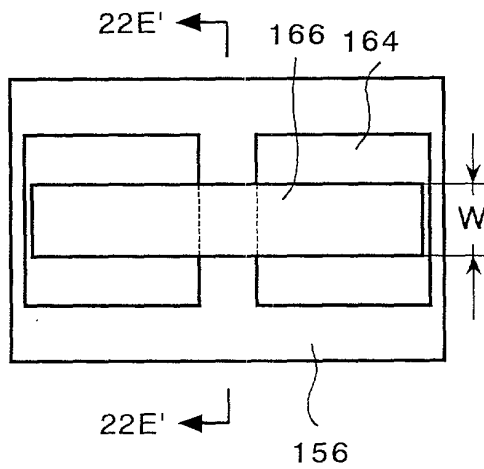


FIG. 22E'

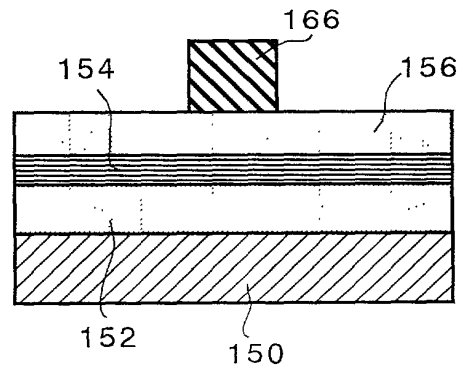


FIG. 22F

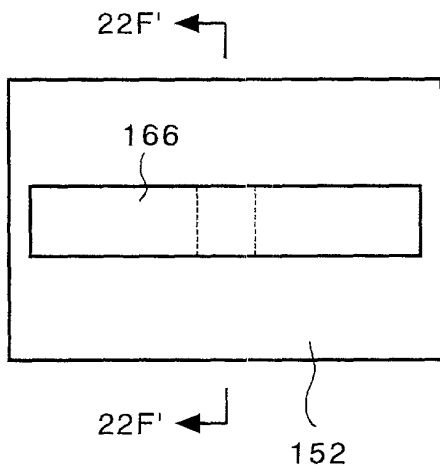


FIG. 22F'

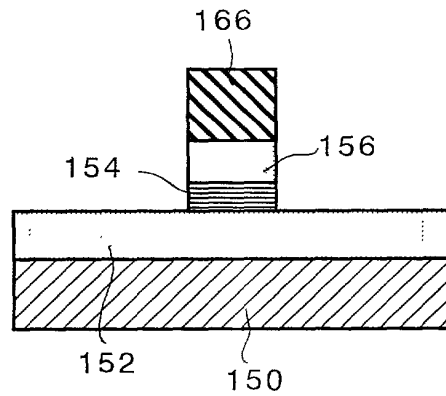


FIG. 22E' 22E' 22F' 22F'

FIG. 22G

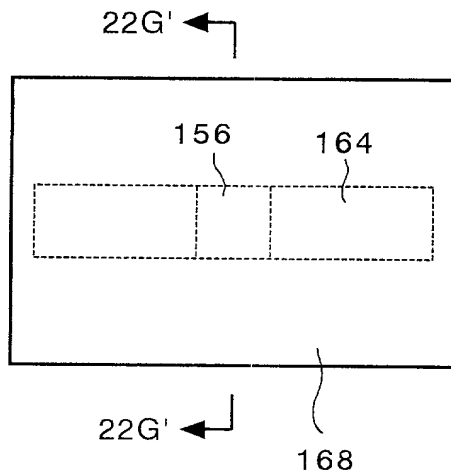


FIG. 22G'

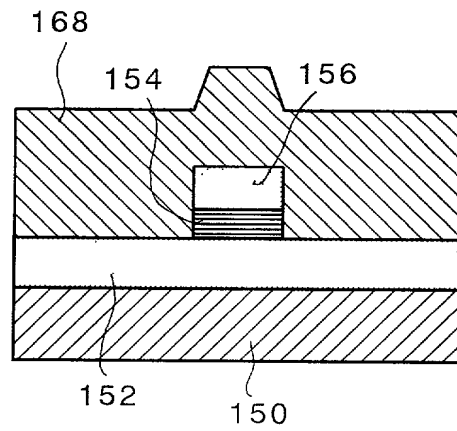


FIG. 22H

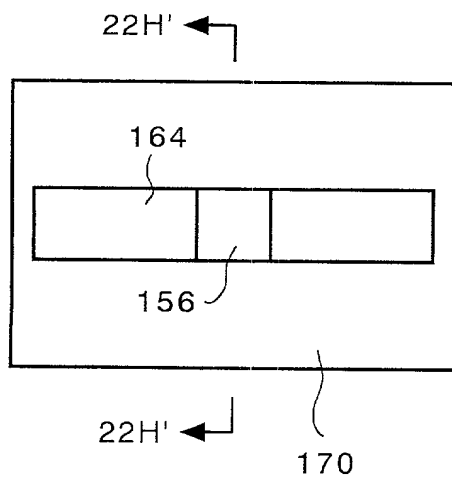


FIG. 22H'

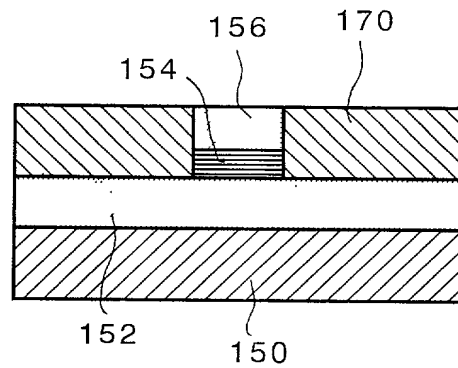


FIG. 22G' 22G 22H' 22H

FIG. 22I

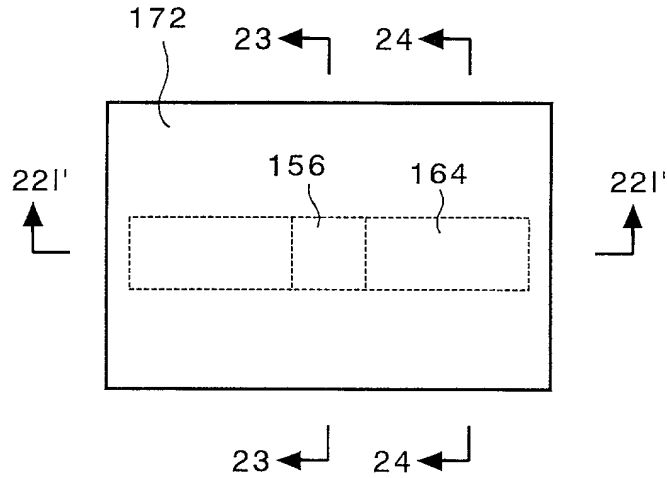


FIG. 22I'

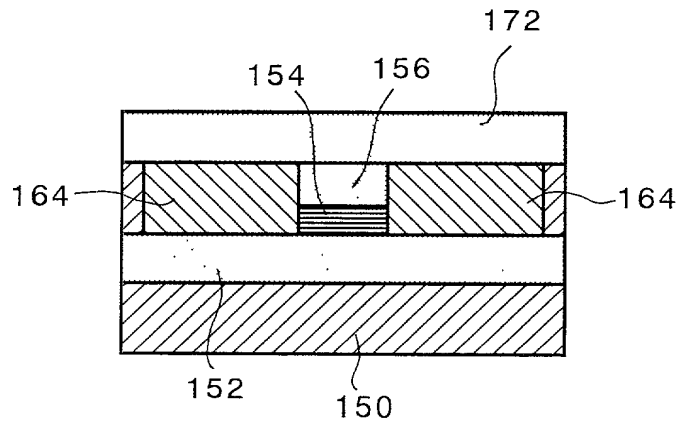


FIG. 23

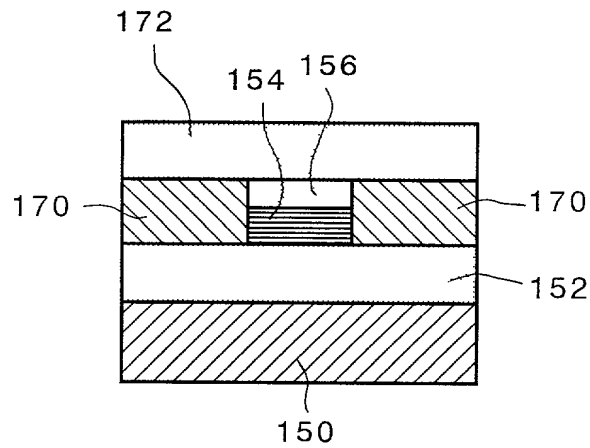
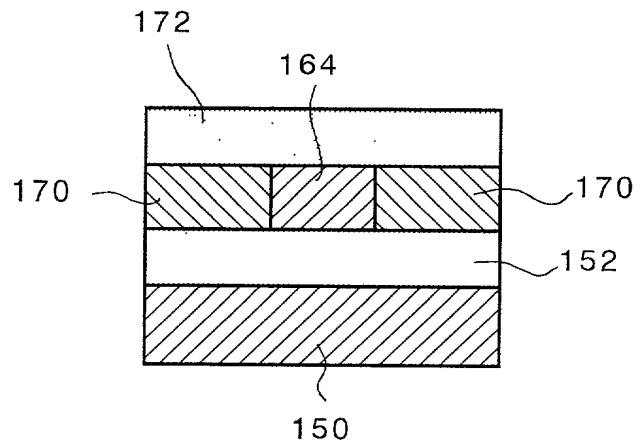
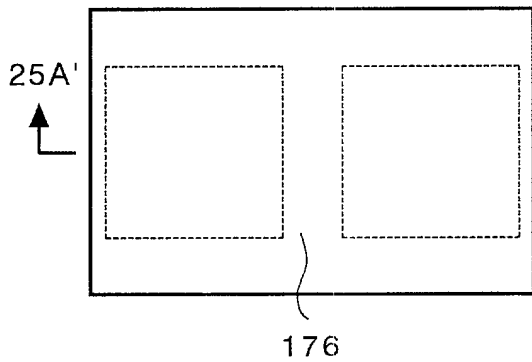


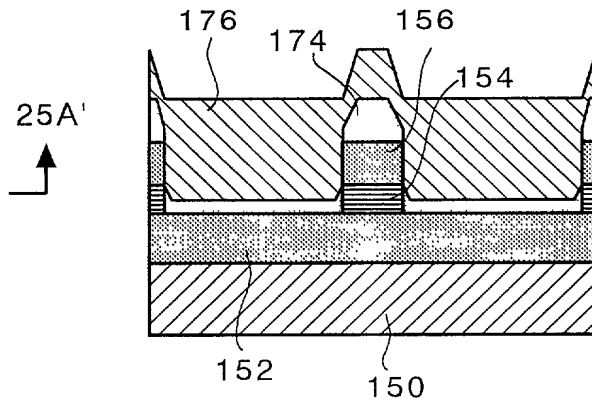
FIG. 24



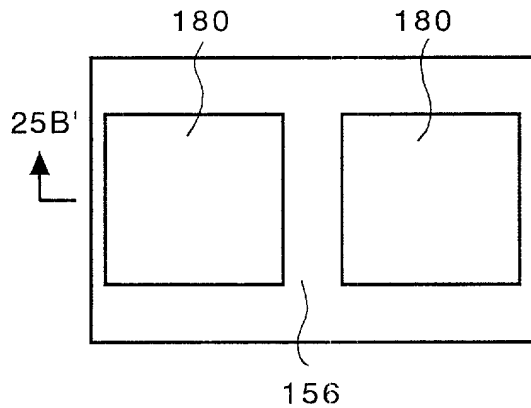
F I G. 25A



F I G. 25A'



F I G. 25B



F I G. 25B'

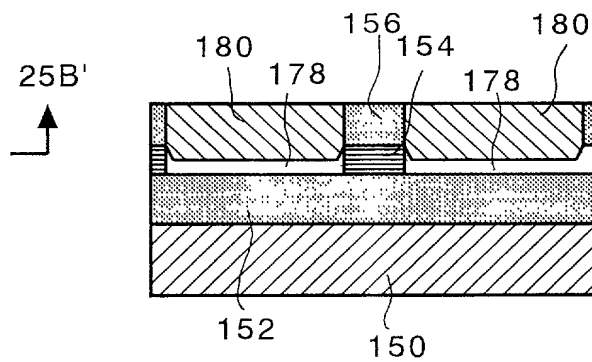


FIG. 25A' 25A